13. **(New)** A method for the preparation of heterogenised catalyst component comprising:

a) providing a halogenated precursor component characterized by the formula:

$$X\,[CH_2]_n\,CH_3 \qquad (I)$$

wherein X is an halogen and $_n$ is an integer within the range of 1-12;

b) reacting the halogenated precursor with an ionic liquid precursor IL to prepare an ionic liquid of the formula:

$$IL^+X^-$$

c) mixing in a solvent the ionic liquid $IL^+X^-$ with a metallocene catalyst component of the formula:

$$R''(Cp)\,(Cp')\,M\,Q_2 \qquad (II)$$

wherein:

Cp and Cp' are each independently a substituted or unsubstituted cyclopentadienyl group, M is a metal from Group 4 of the Periodic Table, R" is a structural bridge imparting stereorigidity between Cp and Cp' and Q is a halogen or an alkyl having from 1 to 12 carbon atoms

wherein the amounts of ionic liquid and catalyst component are in a molar ratio (ionic liquid)/(catalyst component) of from 5:1 to 1:5;

d) heterogeniseng the ionic liquid/metallocine system of subparagraph c) by addition of an apolar solvent to induce a precipitation reaction; and

e) retrieving a metallocene catalyst component heterogenised by said ionic liquid.

14. **(New)** The method of claim 13 wherein the ionic liquid precursor is an N – hydrocarbyl imidazole or pyridine.

15. **(New)** The method of claim 14 wherein the ionic liquid and the catalyst component are mixed in approximately equal stoichiometric amounts.

16. **(New)** The method of claim 14 wherein said ionic liquid precursor is an N-R imidazole in which R is an aryl group or an alkyl group having from 1 – 12 carbon atoms.

17. **(New)** The method of claim 14 wherein the ionic liquid precursor is 1-methy-3-pentylimidazolium bromide or N-pentyl pyridinium bromide.

18. **(New)** The method of claim 13 further comprising prior to subparagraph c) reacting said ionic liquid with an ionic compound characterized by the formula $C^+A^-$ wherein $C^+$ is a cation selected from the group consisting of $K^+$, $Na^+$, $NH_4^+$, and $A^-$ is an anion selected from the group consisting of $PF_6^-$, $SbF_6$', $BF_4^-$, $(CF_3\text{-}SO_2)N^-$, $C1O_4^-$, $CF_3\text{-}SO_3)_2N^-$, $C1O_4^-$, $CF_3\ SO_3^-$, $NO_3^-$ and $CF_3CO_2^-$.

19. **(New)** The method of claim 13 wherein the solvent of subparagraph c) is selected from a group consisting of tetrahydrofuron, methylene dichloride, and toluene.

20. **(New)** The method of claim 19 wherein said apolar solvent is a liquid alkane.

21. **(New)** The method of claim 20 wherein said apolar solvent is n-heptane.

22. **(New)** The method of claim 19 further comprising subsequent to subparagraph c) and prior to subparagraph d) evaporating at least a portion of said solvent prior to the addition of said apolar solvent.

23. **(New)** The method of claim 13 wherein the ligand structure of said metallocene catalyst component incorporates a substituted or unsubstituted bis-indenyl ligand structure, a substituted or unsubstituted bis-benzindenyl ligand structure, or a substituted or unsubstituted bis-tetrahydroindenyl ligand structure.

24. **(New)** The method of claim 23 wherein said metallocene catalyst component is an ethylene bis-tetrahydroindenyl zirconium dichloride, dimethyl silyl bis (2-methylbenzindenyl zirconium dichloride, or dimethyl silyl (2-methyl-4-phenyl-indenyl zirconium dichloride.)

25. **(New)** A heteroginized metallocene catalyst component produced by the method of claim 13.

26. **(New)** A heteroginized catalyst system comprising the catalyst component of claim 25 and an activating agent.

27. **(New)** The catalyst system of claim 26 wherein the activating agent is methylaluminoxane and Q is halogen.

28. **(New)** The catalyst system of claim 27 wherein the methylaluminoxane is present in an amount to provide an Al/M ratio within the range of 100 to 1,000.

29. **(New)** A method for the preparation of an alpha olefin polymer comprising:

a) providing a heteroginized catalyst system comprising a heteroginized catalyst component produced by the process of claim 13 and an activating agent for said catalyst component;

b) introducing said heterogenised catalyst system in an apolar solvent and an alpha olefin monomer into a polymerization reactor;

c) operating said reactor under polymerization conditions; and

d) recovering an alpha olefin polymer product from said reactor.

30. **(New)** The method of claim 29 wherein said alpha olefin monomer comprises ethylene or propylene.

31. **(New)** The method of claim 30 wherein said apolar solvent is n-heptane.

32. **(New)** The method of claim 25 wherein said activating agent is methylalumoxane and wherein said ionic liquid precursor is 1-methyl-3-pentylimidazolium bromide or N-pentyl pyridinium bromide.